

Amendments to the Claims

This listing of claims will replace all prior listings and versions of the claims in this application.

- 1-4. (Canceled)
5. (Withdrawn) An OATP protein comprising the amino acid sequence selected from the group consisting of SEQ ID NO:2 (OATP2), SEQ ID NO:4 (OATP-RP2), SEQ ID NO:6 (OATP-RP3), SEQ ID NO:8 (OATP-RP4), SEQ ID NO:10 (OATP-RP5), and SEQ ID NO:12 (OATP-RP1).
6. (Withdrawn) A modified OATP protein comprising an OATP of claim 5 that maintains an activity of said OATP protein of claim 5, wherein said modified OATP protein comprises at least one amino acid substitution or deletion.
- 7-8. (Canceled)
9. (Withdrawn) An antibody specific for the OATP as claimed in claim 5.
10. (Withdrawn) The antibody of claim 9 wherein said antibody is a monoclonal antibody.
11. (Withdrawn) The OATP of claim 5, produced by:
 - a) inserting a nucleic acid sequence encoding said OATP into an appropriate expression vector;
 - b) transfecting said expression vector into an appropriate transfection host cell;
 - c) growing said transfected host cells in an appropriate culture media; and
 - d) purifying the OATP from said culture media.
12. (Withdrawn) A method for identifying a ligand which is capable of binding to the OATP of claim 5, or to a part of said OATP, said method comprising the steps of :

- (a) reacting said OATP, or part of said OATP, with said ligand which potentially is capable of binding to the OATP or part of said OATP, under conditions which permit the formation of ligand-OATP complexes; and
 - (b) assaying for ligand-OATP complexes, for free ligand, or for non-complexed OATP.
13. (Currently amended) A method of identifying a compound that is transported by an OATP2 protein comprising the amino acid sequence of SEQ ID NO:2, said method comprising the steps of:
- (a) ~~contacting an OATP2 protein which is located in a liver cell or a cell expressing an exogenous~~ a cell comprising OATP2 protein with said compound, under conditions which permit the movement of said compound across the cell membrane;
 - (b) contacting a control cell that lacks OATP2 protein with said compound, under said conditions of step (a); and
 - (c) assaying for the movement of said compound across the membranes of said cell comprising OATP2 protein and said control cell that lacks OATP2 protein, wherein the assaying comprises:
 - (i) lysing the cells to generate cell lysates; and
 - (ii) determining detecting the presence of said compound in the lysates,

wherein the presence of the said compound in the lysate of said cell comprising OATP2 protein, but not in the lysate of said control cell that lacks OATP2 protein, indicates said the compound is transported by OATP2, or wherein a greater quantity of said compound in the lysate of said cell comprising OATP2 protein than in the lysate of said control cell that lacks OATP2 protein indicates said compound is transported by OATP2.
14. (Withdrawn) A method of delivering a molecule to an organ that expresses an OATP protein of claim 5, said method comprising:
- (a) identifying a substrate that is transported by said OATP;

- (b) joining said substrate to said molecule to be delivered to form a substrate-molecule fusion compound; and
 - (c) providing said substrate-molecule fusion compound to said organ.
- 15. (Withdrawn) A fusion protein comprising all or a portion of the OATP of claim 5, attached to a second polypeptide.
- 16. (Withdrawn) A method for identifying a modulator which is capable of augmenting or inhibiting the transport of a substrate by the OATP of claim 5, or a part of said OATP, said method comprising:
 - a) reacting said OATP, or part of said OATP, with said substrate and said modulator which potentially is capable of augmenting or inhibiting the transport of a substrate under conditions which permit the movement of said substrate across a membrane;
 - b) measuring the augmentation or inhibition of transport of said compound by said modulator.
- 17-22. (Canceled)